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The ISI Florence & Umbra Institute
Studies in International Education

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Angelo Pontecorboli Editore - Firenze
E-mail: info@pontecorboli.it
www.pontecorboli.com
ISBN 978-88-3384-036-9

Printed in Italy, June 2019

Spotlight on… Paola Pedrelli

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Dr. Paola Pedrelli (PhD in Clinical Psychology) is director of Dual Diagnosis Studies at the Depression Clinical Research Program (Massachusetts General Hospital in Boston). She practices as a clinical psychologist at the same hospital and teaches Clinical Psychology at Harvard Medical School. Her research focuses on etiology (disease causation), assessment, and treatment of comorbid affective disorders and alcohol misuse.

We know that some students coming to Europe engage in heavy drinking while abroad, exposing themselves to all the risks involved. The European laws that allow them to drink before the age of 21 seem like an open invitation to some of them to drink too much. Some of those students were engaged in binge drinking already before they went abroad and some start drinking here. But we also know that among them are students with mental health challenges like depression. What do we know, and what should we know, about students who have mental health issues and are involved in heavy drinking as well? A better understanding of this comorbidity (the simultaneous presense of two chronic diseases), as well as the underlying mechanisms and motivational aspects of heavy drinking, can lead to a more effective treatment. For study abroad advisors, more knowledge could add to a better preparation and support for students going abroad in Europe.

Dr. Paola Pedrelli is doing important research on the co-occurrence of heavy drinking and mental health issues like depression. This is a topic of great interest to colleges in general and study abroad programs in particular, since students often find themselves in places where it is legal to consume alcohol, so we spoke to her about her research and the developments in the field

You studied in Bologna for your MA in Psychology. In 1997, you went to the USA for your PhD and you are still there, working as a researcher and clinical psychologist in Boston. Could you tell us more about

your career choices and how your interest in depression and comorbidities developed?

In 1995, I studied for one year at University of California, San Diego, where I met my future mentor, John McQuaid. Seeing the type of job he had (which included conducting research studies, writing grants, and making significant contributions to science through his papers) was very appealing to me. At the time, I knew that conducting research in psychology in Italy was not going to be possible. So, I chose to move to the United States to do a Ph.D. in clinical psychology and be trained in conducting rigorous research.

And you still feel that it was a good choice?

Very much so. I love living here and I love my job. So, I think it was a good choice.

Would you like to tell us how your interest in depression and co-morbidities developed?

Depression is one of the most common mental health conditions, a disease that can be associated with many significant problems. For that reason, I have been very interested in understanding this condition to develop effective treatments and relieve the suffering of many patients. I started to become interested in studying the etiology and treatment of depression (both when occurring alone and when co-occurring with other conditions) when I was at the the University of California in San Diego (UCSD). There I worked on developing a treatment based on Cognitive Behavioral Therapy (CBT) principles for depression co-occurring with schizophrenia. CBT is an evidence-based treatment that has been validated extensively. At the time, evidence-based psychosocial treatments were not provided to patients with schizophrenia. So, when it started to emerge that CBT adapted for this population was effective, I became very excited about it.

I remained in San Diego from 1997 to 2004, then I went to Seattle for

one year, and I have been here in Boston since 2005. After mt Ph.D., I was supposed to go back to Italy as I had promised my family, but I ended up in Boston. When I went to Italy to explore job options and found very limited opportunities, I opted to remain in the United States. The compromise with my family was that I would move closer to Italy by moving to the East Coast. It actually made a big difference – the flight to Italy from Boston took half the time than the one from San Diego.

My mentor, Maurizio Fava, the founding director of the Depression Clinical Research Program (DCRP) here in Boston, is Italian. So, I came here also hoping we might be able to develop some collaboration with Italy. However, I have not developed any formal collaboration with any Italian groups yet. When I joined the DCRP at Massachusetts General Hospital (MGH), I started to become involved in conducting studies with young adults in college. I shifted my interest towards young adults because I was able to see what a significant difference one could make by intervening early in people's lives. By intervening with people age 18 rather than 50, a lot of negative consequences associated with chronic symptoms can be prevented. By treating individuals with mental health problems early on, one can really change the trajectory of their conditions. When I started working with this age group in the public health field there was a lot of interest in heavy drinking because of its high prevalence among young adults in college and because of the severe consequences associated with this behavior. So I started to be more interested in the co-occurrence of heavy drinking and depression in this population. At the time, there were not a lot of researchers studying the influence of depression on alcohol misuse. I developed a treatment for college students with both depression and heavy drinking, and now I have spent six years studying it. I am currently writing a paper about my results that show that CBT is associated with reduction of depressive symptoms as well as heavy drinking.

Can you tell us more about your research?

In the past three or four years, there has been a very significant interest within psychiatry in how we can leverage technology to improve

treatment and assessment. In that context I started collaborating with a team from Massachusetts Institute of Technology (MIT) to examine whether we can leverage data collected passively (that is, without input from individuals) through sensors to detect severity of depression. We track movements and socialization (e.g., number of message texts and how much time they spend on the phone) through sensors in mobile phones and physiological response through a wearable device. Recently, I finished a pilot study in this area that showed promising results and we just started a larger study to examine whether our findings will be replicated. I find working in Boston very exciting because you are surrounded by people who are doing really cutting-edge research. This makes it possible to establish very exciting collaborations and develop innovative ideas.

I am excited about research itself, the process of investigating questions and knowledge. I could probably be examining a number of different problems and phenomena. I love being a scientist because I find the process of understanding people and their behavior very intriguing. Ultimately, I want to use science to identify ways to help patients.

Do you also receive patients for treatment?

I am also a psychologist at Massachusetts General Hospital (MGH) and part of my job is seeing patients. In our clinic we primarily see patients with depression. I deliver CBT, which is an evidence-based treatment for depression. Often in the U.S., patients with depression first report their symptoms to their primary care doctor, who might prescribe medication. Some patients get better and those who do not improve or who are not interested in medication are referred to see a therapist. My group is specialized in treatment of resistant depression, so most of our patients have chronic depression and comorbid psychiatric illnesses, including anxiety. In the US, most people have health insurance, especially now that the ACA[1] is in place. A lot more people than ever before go to

1 The Affordable Care Act, enacted under President Obama's administration

the therapist because it is not so costly. While paying out-of-pocket for health care is expensive; co-payment for one therapy session is usually only about 15 to 30 dollars.

You are involved in research, treatment and raising awareness around this topic.

My main goal is to make a difference in people's lives, so I am always trying to find ways to have a positive impact and disseminate science-based knowledge. It is unfortunate that oftentimes research papers do not have an impact on policies. I think scientists have a responsibility to advocate for evidence-based programs and for policies that are based on science.

Could you tell us what you do in the area of raising awareness?

I have been invited by colleges, high schools and scientific organizations to present my research. By going to different institutions like hospitals, psychiatry departments, even universities and high schools, to talk about my research program, I have been able to raise awareness about the fact that depression is common among young adults and that, in this population, it can often co-occur with heavy drinking. This is news for a lot of people. People know about the existence of problematic drinking and about depression. Yet, the fact that these two conditions often co-occur among college students is a notion that is not known, which is problematic. If clinicians don't know that they coexist, they may not treat them and programs addressing both of them are not developed.

Could you tell us some more about the importance of gender differences you have found in your research?

Men and women differ in a range of ways. Women are less able to metabolize alcohol than men because of differences in their bodies. Wom-

en and men receive different alcohol-related societal messages. There is more stigma about getting drunk for women than men. Women cope with life and adversities differently than men. Women have higher vulnerability to developing depression than men. Conversely, men are at higher risk for substance use disorders. Given this body of knowledge, I have always been interested in examining differences in the two genders. I conducted several studies examining whether different mechanisms would explain heavy alcohol use in men and women in college and in a few studies I found some differences. For example, in one study I examined whether our ability to withstand stress, called "distress tolerance", is associated with drinking. I found that women who have a lower tolerance for their distress tend to drink heavily to cope with negative affect: "I am having a bad day and I really do not want to deal with it, so I am going to drink. This way I will feel better and won't have a bad night." However, I did not find this relationship among young men.

When you look at this population of young adults, what do you consider the most promising developments in research on depression and alcohol use?

What I see as very promising is the use of technology, which I feel really improves the methods of studying the etiology of heavy drinking and depression and the impact of our treatment. In psychology, we often study a phenomenon by asking questions to a respondent. However, this method is of course biased because, in most cases, recall is not objective or accurate. New developments in technology now allow researchers to assess specific behaviors passively, without relying on the person's report. Moreover, the high adoption of smart phones allows a more frequent assessment of behaviors while they are happening in the real world. There is a methodology called EMA (Ecological Momentary Assessment) whereby each day patients or participants are sent surveys on their cell phones to which they respond, so we know their daily mood and their daily alcohol consumption in a more accurate way. Through technology, we can have

much better information. We can now study with higher accuracy and reliability if a certain mood is associated with increased alcohol use. That is very exciting to me.

Technology can also allow us to predict with more precision when someone is about to drink. We can leverage this knowledge by sending text messages that are tailored to them and that may prevent them from consuming alcohol at high-risk levels. This approach is called "Just-In-Time Adaptive Intervention" (JTAI). It may be more effective than seeing a therapist once a week or every two weeks because it provides help when the individual needs it. I feel like text-based interventions and EMA are really revolutionizing the field of psychology.

Study abroad institutes have to deal with the fact that academic terms overseas seem to be a very inviting environment for high alcohol use. Is there any research done about these topics in the study abroad context?

Some scientists that have done research, including Dr. Eric Pedersen, from the University of Washington. Dr. Pedersen and his group have shown that there is a significant increase of alcohol consumption among students who go abroad. Unfortunately, that is worrisome because once they experiment with a high level of drinking they tend to maintain that level once they return to the United States. It is something that colleges really should start addressing because students who go abroad are at high risk of heavy drinking and heavy drinking puts them at risk for a number of additional dangerous behaviors. For example, it has been reported that sexual activity without protection (e.g. not using condoms) is more frequent among those students abroad who drink heavily. Numerous studies have looked at strategies to prevent heavy drinking. For example, normative feedback is a treatment we implement a lot in the context of binge drinking: clinicians first ask students what they think is the percentage of people around them who drink or drink heavily, and then they provide the feedback. Often students' estimates are significantly higher than the correct one. A lot of students think that all their peers engage in heavy

drinking, but actually it is not the case. Students who have really high norms, who think that everybody drinks, are the ones that actually are going to drink a lot. We have seen that addressing those inflated estimates helps reducing heavy drinking. Moreover, it has been reported that students who go abroad believing that everyone going abroad drinks a lot, end up drinking heavily. This is a problem that should be addressed in the program before the students go abroad, not when they are already there. Unfortunately, universities have low resources for these kinds of things and they prioritize the those who are still in the U.S. and not students who-go abroad. Colleges should consider preparing the students for both the trip and the experience. It has also been shown that the students who are less knowledgeable about the culture tend to stay and hang out more with the other Americans – they are the ones who drink more. Being immersed with the locals seems to be associated with lower rates of heavy drinking.

Knowing that quite a few students tend to go abroad unprepared, what advice can you give to the study abroad institutes?

If think it would be very beneficial to create opportunities to integrate students with the locals. Oftentimes in treatment we focus on making long-term goals more salient to the patient. Rather than have them thinking, "This is my three months in Italy. I'm going to just party and that's it," I believe reminding them about their long-term goals and the opportunity to immerse and learn the local culture (not necessarily just be there to drink because they can) would be beneficial. It may also be helpful to remind them, in a non-judgmental or condescending way, that it is not correct that all college students abroad drink heavily. Some professors, or adults in general, tend to sound condescending to young adults and that is something that is really not going to help. It may also be helpful to provide and suggest alternative behaviors to drinking. Oftentimes when students are in a new country and don't really know what to do, they may turn to drinking. They may be excited about the possibility of going to a country where they are old enough to drink. However, if the

institutions are provided exciting alternatives – for example, free tickets to the theater or gym membership or invite students to play a soccer game together – students may be able to see that drinking is not the only thing they can do. In short, providing students with alternatives may reduce their likelihood to drink.

Could you see yourself working in Italy doing what you do?

No, I could not. In Italy, funding for research is very limited, especially for mental health. I wouldn't really be able to do research at this level.

Would you consider yourself one of the famous "*cervelli in fuga*" (brain drain)?

Yes, I definitely am a "*cervello in fuga*." There are a lot of Italian people in Boston as well. I know a lot of them in this area. For example, in my research group (the Depression Clinical Research Program) out of 15 doctors, 3 are Italian, as is our founding director.

So, you are in good company there?

I am in very good company!

Looking forward to your next paper. Thank you very much.